

Claims:

1 **1.** A method for maintaining a connection between a server and a
2 client comprising the steps of:
3 receiving a message;
4 determining whether to store one or more elements of the
5 message;
6 storing the one or more elements of the message when the one or
7 more elements of the message are to be stored;
8 transmitting the message; and
9 determining whether the server has failed and when the server has
10 failed, restoring the server to a pre-failure connection state using the one or more
11 stored message elements.

1 **2.** The method as recited in claim **1**, further comprising the steps of:
2 determining whether to delay the message; and
3 delaying the transmission of the message until one or more
4 conditions are satisfied when the message is to be delayed

1 **3.** The method as recited in claim **2**, wherein the one or more
2 conditions comprises successful storage of the one or more elements of the
3 message.

1 **4.** The method as recited in claim **1**, further comprising the steps of:
2 determining whether to discard the message;
3 discarding the message when the message is to be discarded; and
4 wherein the message is not transmitted when the message is to be
5 discarded.

1 **5.** The method as recited in claim **1**, further comprising the steps of:
2 determining whether to modify the message; and

3 modifying one or more elements of the message when the
4 message is to be modified.

1 **6.** The method as recited in claim **1**, wherein the step of restoring the
2 application to a pre-failure connection state using the one or more stored
3 message elements further comprises periodically transmitting an outgoing
4 message to maintain the connection until the application is restored.

1 **7.** The method as recited in claim **1**, further comprising the step of
2 periodically storing a current state of the server and discarding any stored
3 elements that are no longer needed to restore the server to the current state.

1 **8.** The method as recited in claim **1**, wherein the message is a
2 protocol segment.

1 **9.** The method as recited in claim **1**, wherein the message conforms
2 to the Transmission Control Protocol (TCP) standard.

1 **10.** The method as recited in claim **1**, wherein the one or more
2 elements are stored in a log server

1 **11.** The method as recited in claim **10**, wherein the log server is
2 remotely located from the server.

1 **12.** The system as recited in claim **1**, wherein the one or more
2 elements are stored in a stable memory in the server.

1 **13.** The method as recited in claim **1**, wherein the one or more
2 elements are stored in a secondary server.

1 **14.** The method of claim **1**, further including the step of periodically
2 transmitting, when said server has failed, an outgoing message to the client to
3 maintain the connection until the server is restored.

1 **15.** A system comprising:
2 a server computer having a process layer, a protocol layer coupled
3 to the process layer through a first wrapper, and a network interface coupled to
4 the protocol layer through a second wrapper;
5 a log server coupled to the first wrapper and the second wrapper;
6 one or more client computers; and
7 one or more network connections between the one or more client
8 computers and the network interface of the server computer.

1 **16.** The system as recited in claim **15**, wherein the first wrapper is
2 interposed in a first interface between the process layer and the protocol layer,
3 and the second wrapper is interposed in a second interface between the protocol
4 layer and the network interface.

1 **17.** The system as recited in claim **15**, wherein the first wrapper and the
2 second wrapper are interposed in the protocol layer.

1 **18.** The system as recited in claim **15**, wherein the first wrapper and
2 second wrapper are capable of receiving a message, determining whether to
3 store one or more elements of the message, storing the one or more elements of
4 the message in the log server when the one or more elements of the message
5 are to be stored, transmitting the message, and determining whether the server
6 has failed and when the server has failed, restoring the server to a pre-failure
7 connection state using the one or more stored message elements.

1 **19.** The system as recited in claim **18**, wherein the first wrapper and
2 second wrapper are further capable of determining whether to delay the
3 message, and delaying the transmission of the message until one or more
4 conditions are satisfied when the message is to be delayed.

1 **20.** The system as recited in claim **19**, wherein the one or more
2 conditions comprises successful storage of the one or more elements of the
3 message.

1 **21.** The system as recited in claim **18**, wherein the first wrapper and
2 second wrapper are further capable of determining whether to discard the
3 message, discarding the message when the message is to be discarded, and not
4 transmitting the message when the message is to be discarded.

1 **22.** The system as recited in claim **18**, wherein the first wrapper and
2 second wrapper are further capable of determining whether to modify the
3 message, modifying one or more elements of the message when the message is
4 to be modified.

1 **23.** The system as recited in claim **18**, wherein the second wrapper is
2 further capable of periodically transmitting an outgoing message to maintain the
3 connection until the application is restored.

1 **24.** The system as recited in claim **18**, wherein the first wrapper and
2 second wrapper are further capable of periodically storing a current state of the
3 server and discarding any stored elements that are no longer needed to restore
4 the server to the current state.

1 **25.** The system as recited in claim **18**, wherein the message is a
2 protocol segment.

1 **26.** The system as recited in claim **18**, wherein the message conforms
2 to the Transmission Control Protocol (TCP) standard.

1 **27.** The system as recited in claim **15**, wherein the log server is
2 remotely located from the server.

1 **28.** The system as recited in claim **15**, wherein the log server is a
2 stable memory in the server.

- 1 **29.** The system as recited in claim **15**, wherein the log server is a
- 2 secondary server.